

ISC Konstanz

PV production in EU



Radovan Kopecek

ISC Konstanz

International Solar Energy Research Center Konstanz

- Nonprofit association based in Germany, founded in 2005
- Team of 60 employees from 20 different nations
- Focus **R&D on c-Si solar cells, modules and energy systems** with academic and industry partners in publicly funded and bi-lateral projects
- **Technology Transfer** of PERC, TOPCon (TOUCAN) and n-IBC (ZEBRA)



PV technology

- Clean technology
- CO₂ emission reduction
- Since 2020 cost effective energy
- Since 2022 freedom energy



Christian Lindner, Deutscher Bundestag, February 27, 2022

>> Germany wants to become climate neutral until 2035 (200GW+ PV until 2030)

PV production in EU

The weekend read: EU solar manufacturing – The time is now

MARCH 12, 2022 BECKY BEETZ

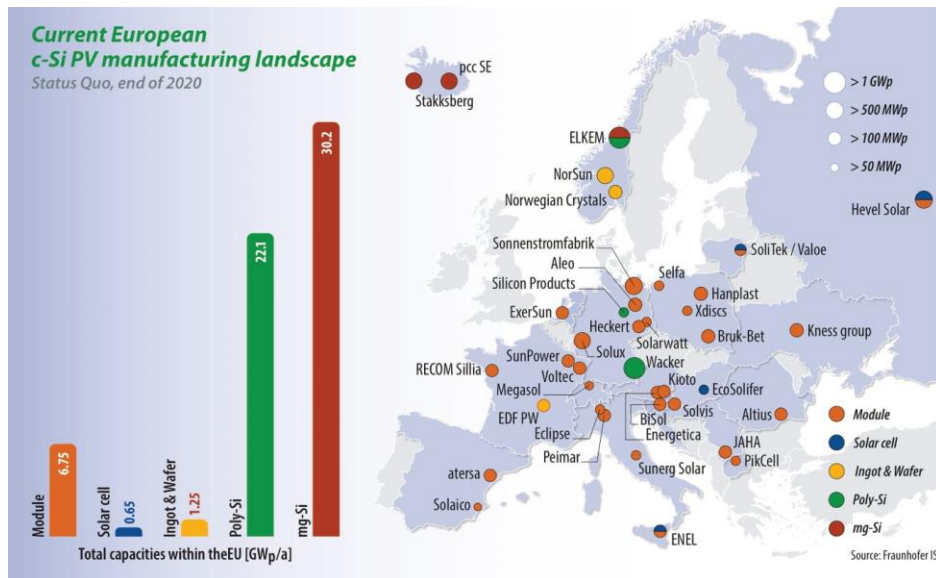
pv magazine

HIGHLIGHTS

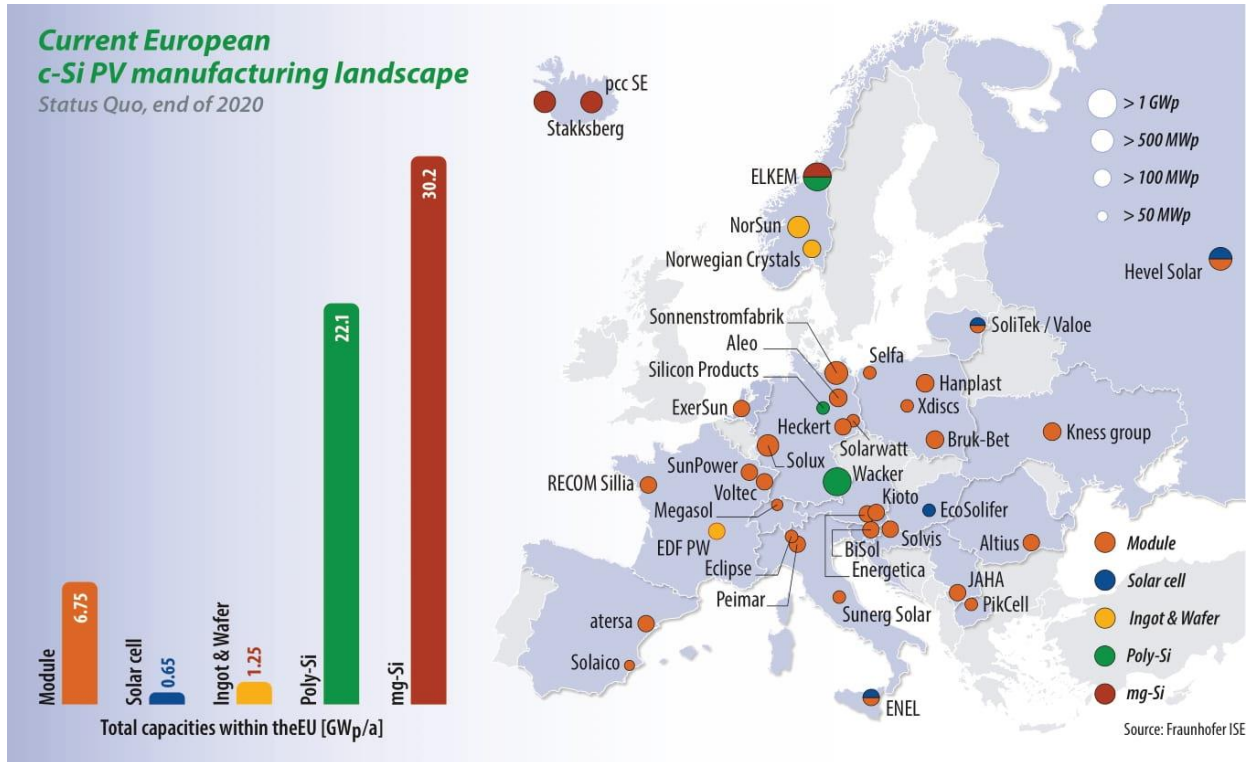
MARKETS

MODULES & UPSTREAM MANUFACTURING

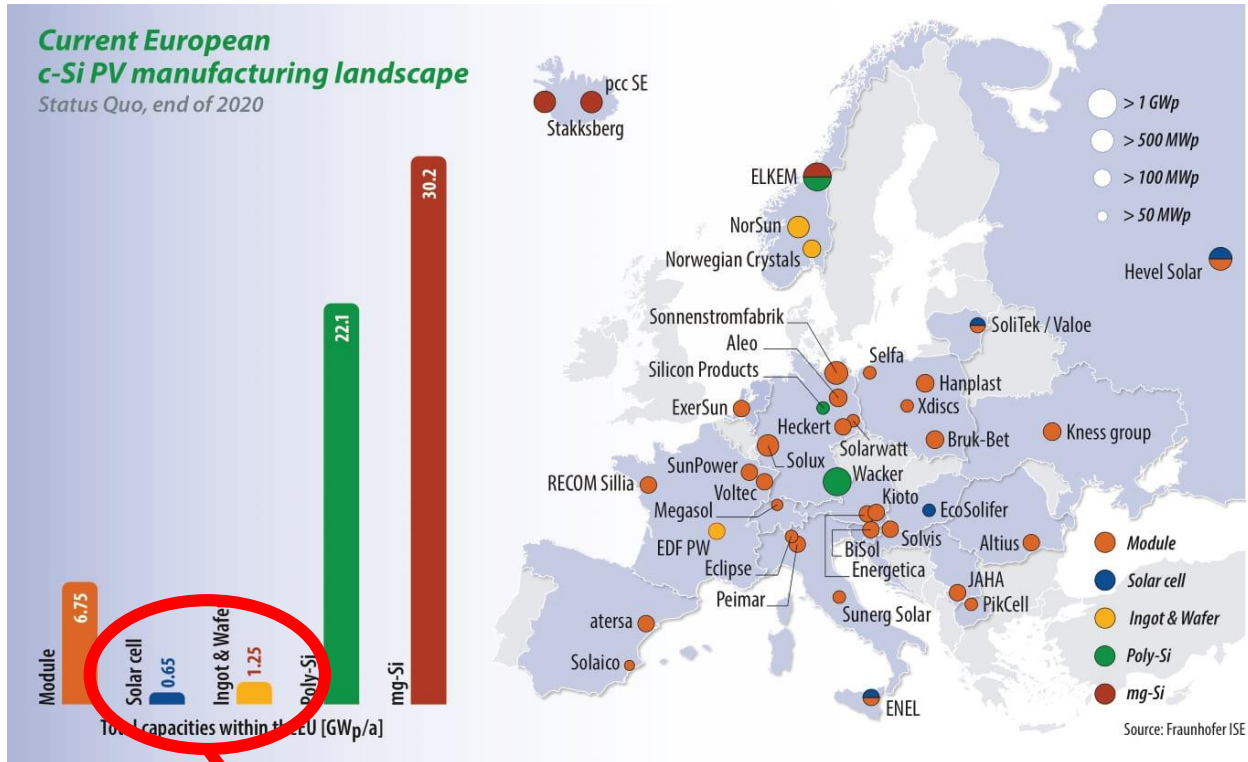
EUROPE



PV production in EU

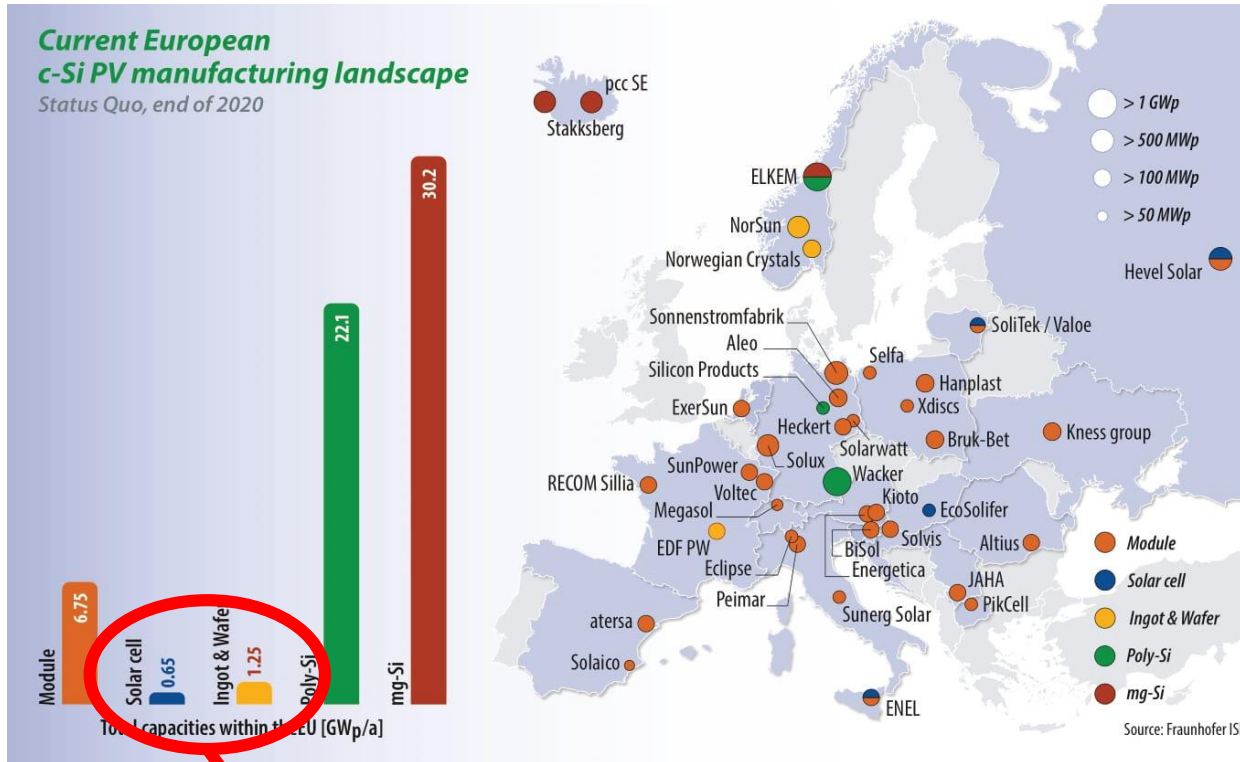


PV production in EU



have to catch up

PV production in EU



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5 GW Solar Module Fab Plans For France

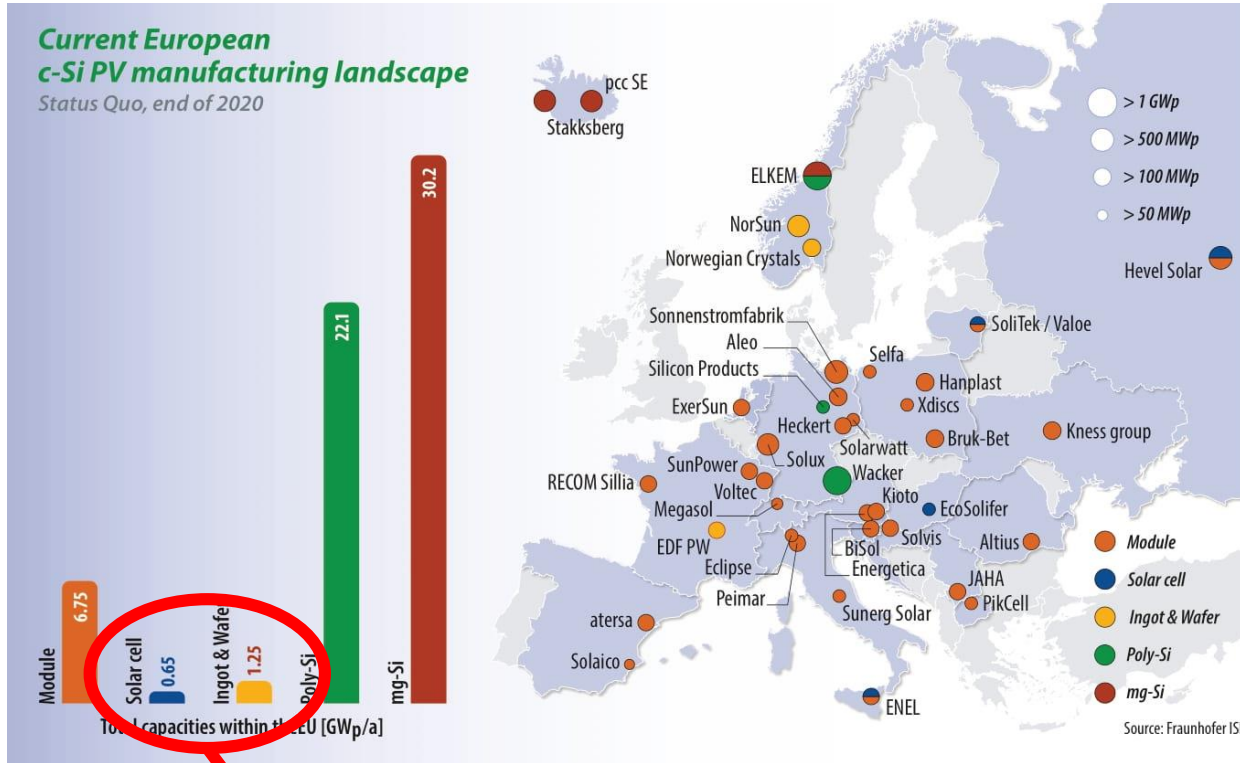
French Solar Start-Up Carbon Plans Gigafactory For TOPCon & IBC Solar Modules

Mar 04, 2022



The TOPCon and IBC solar module Gigafactory plans of Carbon are supported by research institutes focused on these technologies, namely ISC Konstanz and the Becquerel Institute. (Illustrative Photo; Photo Credit: Terelyuk/Shutterstock.com)

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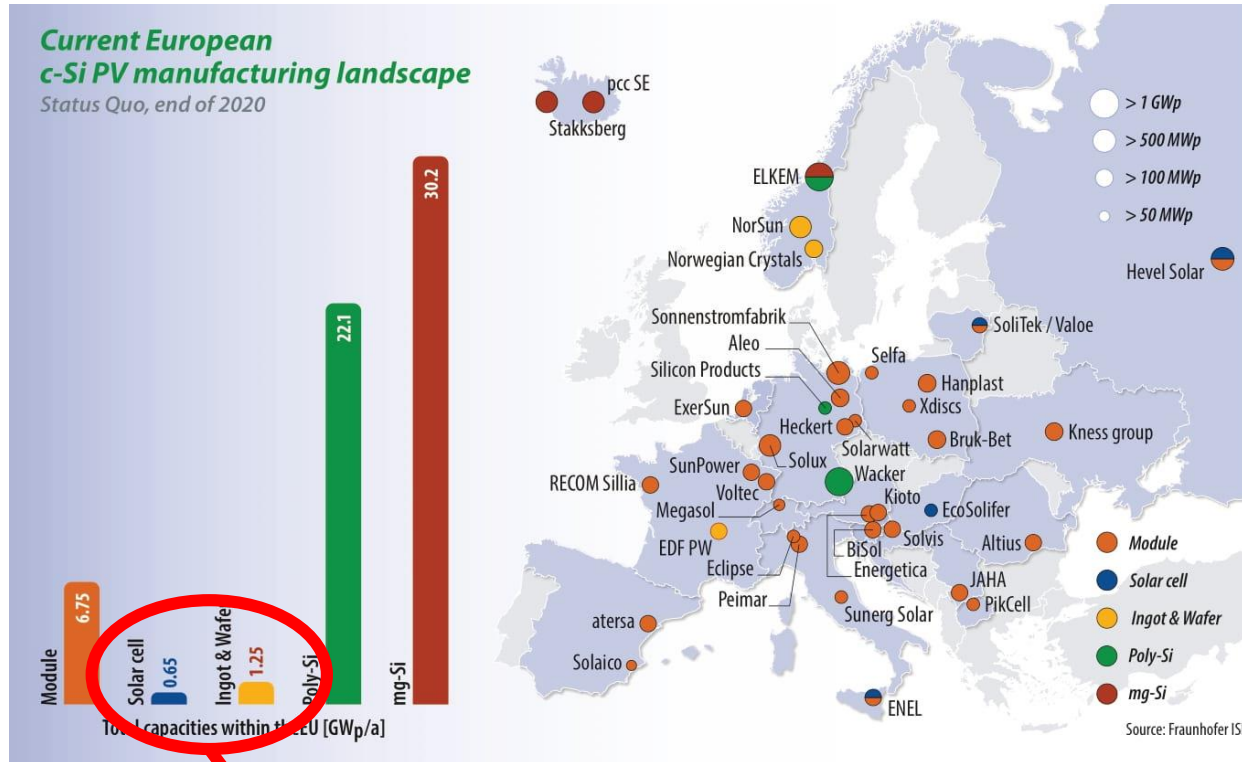
Mar 04, 2022

!!!VERTICAL INTEGRATED!!!



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Wafer

Norsun 5GW

...

HJT

Meyer Burger 3GW

Enel 3GW

REC 2GW

...

TOPCon

Greenland (also PERC vertical int.)

5GW

Carbon (vertical int.) 5GW

Kalyon (vertical int.) 5GW

...

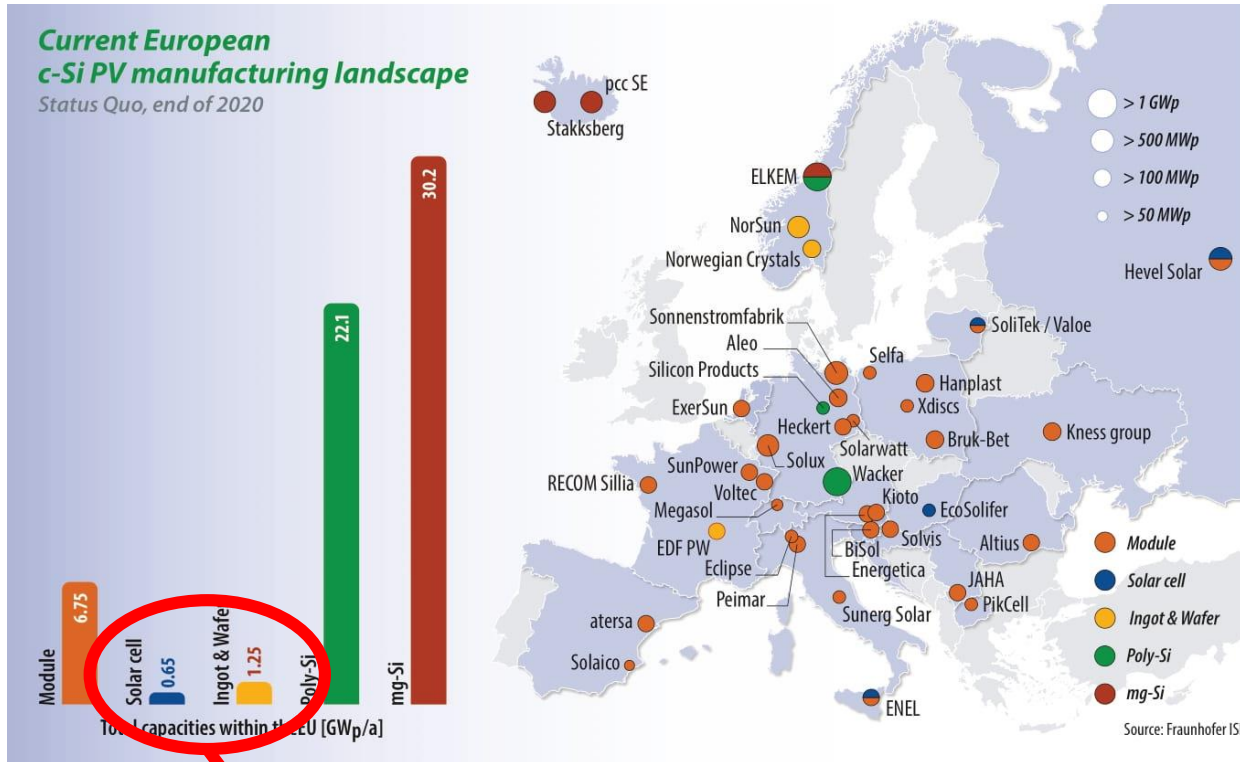
IBC

ValoeCell 1GW

Carbon (vertical int.) 5GW

....

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V... 1GW

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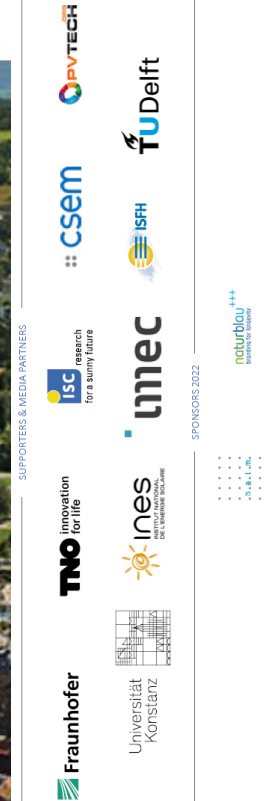
....

The PV future is n-type bifacial

nPV workshop series from 2011: 2022 in Konstanz

npworkshop
n-type technology series since 2011

[Main](#) [Chairwoman's Message](#) [Abstracts](#) [Program](#) [Registration](#) [Previous WS](#)

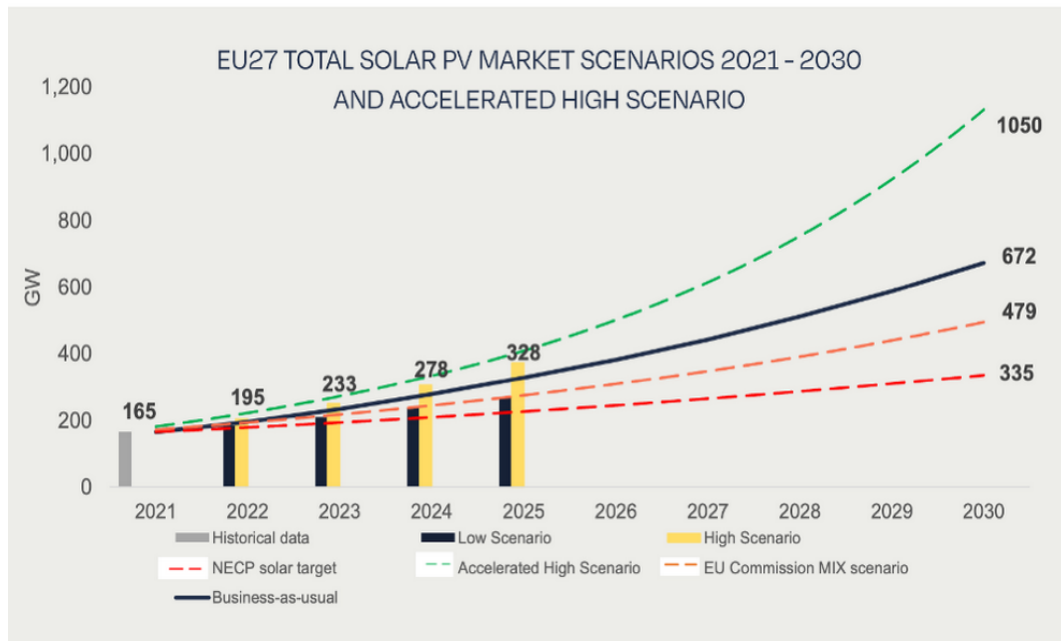


PV deployment in EU

EU's REPowerEU To Reduce Russia Reliance Short on Solar

EU Stresses On RE To Become Independent Of Russian Gas Supply Before 2030; SPE Criticizes Commission's Low Solar Ambition

Mar 11, 2022



- Total 1TW PV systems in April 2022 (party in Konstanz)
- Total 165GW in EU
- In 2030 60+GW market is expected

Summary

- Local vertical integrated PV production needed for reaching EU's goals (including supply chain like poly-Si, glass, frames...)
- 50-75% modules have to come from EU
- Incentives like PV-IPCEI are needed not only for CAPEX but also for OPEX





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Thank you for your
attention